WHAT IS CLAIMED IS:

1. An exhaust gas processing device comprising:

an air preheater for preheating air for combustion in a combustion device by using an exhaust gas emitted from the combustion device;

a gas-gas heater heat recovery device composed of a heat transfer tube for recovering the heat of the exhaust gas at the outlet of the air preheater to a heat medium;

a dust collector for collecting dust in the exhaust gas at the outlet of the gas-gas heater heat recovery device;

a wet-type desulfurization device for removing sulfur oxide in the exhaust gas at the outlet of the dust collector;

a gas-gas heater re-heater composed of a heat transfer tube for heating the exhaust gas at the outlet of the wet-type desulfurization device by using the heat medium supplied from said gas-gas heater heat recovery device,

being arranged in that order from the upstream side to the downstream side of an exhaust gas duct of the combustion device; and

a heat medium circulation line for connecting heat transfer tubes provided in each of the gas-gas heater heat recovery device and the gas-gas heater re-heater and for circulating the heat medium through the heat transfer tubes,

wherein

the heat transfer tube of the gas-gas heater heat recovery device is squarely arranged in the gas flow direction in such a manner that the inter-tube flow rate, which is the flow rate of the exhaust gas between the heat transfer tubes adjacent in the direction orthogonal to the gas flow direction, can be 10 m/s or lower.

2. The exhaust gas processing device according to Claim 1, wherein the dust collector of the wet type is disposed between the wet-type desulfurization device and the gas-gas heater re-heater in the exhaust gas duct.

3. The exhaust gas processing device according to Claim 1, wherein at least some of the heat transfer tubes of the gas-gas heater are composed of fin-equipped heat transfer tubes, and the fin pitch of the heat transfer tubes of the gas-gas heater heat recovery device is set at 7.25 to 10.16 mm, and the fin pitch of the heat transfer tubes of the gas-gas heater re-heater is set at 6.35 to 8.47 mm.

4. The exhaust gas processing device according to Claim 1, wherein at least three stages of the heat transfer tubes composed of a bare tube are installed on the stage preceding the fin-equipped heat transfer tubes of the gas-gas heater re-heater, and said bare tube is staggered arrangement in the gas flow

direction so that the inter-tube flow rate, which is the flow rate of the exhaust gas between the heat transfer tubes adjacent in the direction orthogonal to the gas flow direction, cannot be more than 12 to 16 m/s.

5. The exhaust gas processing device according to Claim 4, wherein the heat transfer tubes composed of the bare tube installed in the stage preceding the fin-equipped heat transfer tubes of the gas-gas heater re-heater are either made a part of the heat medium circulation line for circulating the heat medium through the gas-gas heater heat recovery device and the gas-gas heater re-heater, or made a steam line for flowing steam that is installed separately from said heat medium circulation line.

6. The exhaust gas processing device according to Claim 1, wherein the heat transfer tubes of the gas-gas heater heat recovery device are tied in bundles each having a prescribed number of heat transfer tubes; the bundles are each composed of heat transfer tubes of not more than eight stages arranged in the gas flow direction and have a width of 3000 mm or less in the direction orthogonal to the gas flow direction, and in front and in back of the bundles in the gas flow direction are installed dust removers.

7. The exhaust gas processing device according to Claim 5,

wherein either the gas-gas heater heat recovery device or the gas-gas heater re-heater is provided with dust removers; differential pressure gauges and/or thermometers are provided in front and in back of the bundles in the gas flow direction; and control devices are provided to activate the dust removers when the measured values of the differential pressure gauges and/or the thermometers become prescribed values or higher or lower.